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CHARACTERS AND SYNONYMIES AMONG THE GENERA OF ANTS

Part II

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What follows is a continuation¹ of the inquiry into the characters and interrelationships among the genera of ants, having as its goal the eventual reclassification of the Formicidae along more natural and useful lines than those presently holding. Perhaps some readers will be surprised to find that several of the genera mentioned below were originally described in the wrong tribe or even in the wrong subfamily, and that many monotypic genera are actually synonymous with more familiar genera with which they have never been associated. Nevertheless, such cases are commonplace among the largely very artificial tribes of the larger subfamilies, and more of them will duly be exposed, and must be exposed, before the really basic work on ant classification can begin. A careful perusal of these cases, as well as those treated in Part I and in some of my other papers, will make clear the impossibility of constructing a workable key to the ant genera, and should also open the eyes of those who now regard the existing generic keys as basically sound. I think that I need not labor the fact that a key bringing what now prove to be synonymous genera out to different tribes is a key of very limited usefulness and is scarcely reliable. Only after the synonymy is fully uncovered, justified, and formally recorded can we begin to think of large-scale generic keys. It is suggested, therefore, that useful generic keys will be greatly hastened if more myrmecologists will spend a little of their time investigating and formally publishing new synonymy.

¹ Part I: *Breviora, Mus. Comp. Zool.* 11: 1-13 (1953).

ANOCHETUS Mayr

Anochetus Mayr, 1861, Europ. Formicid., p. 53. Genotype: *Odontomachus ghilianii* Spinola, 1851, by designation of Bingham, 1903.

Myrmapatetes Wheeler, 1929, Amer. Mus. Novit., 349: 6. Genotype: *Myrmapatetes filicornis* Wheeler, 1929, loc. cit., fig. 3, male, monobasic. **New synonymy.**

Wheeler described *Myrmapatetes filicornis*, "obviously one of the Dolichoderinae," from a unique male taken on Larat Island, near New Guinea. His original figure, and even more clearly the type specimen in the Museum of Comparative Zoology, show that he had before him not a dolichoderine, but a ponerine male apparently representing one of the smaller Indo-Australian species of *Anochetus*, and typical of males of the latter genus in every respect save for its larger-than-usual compound eyes. When males and workers are associated in one nest series, further synonymy may result at the species level. Meanwhile, *Anochetus filicornis* (Wheeler) becomes the necessary **new combination**.

ASPHINCTOPONE Santschi

Asphinctopone Santschi, 1914, Boll. Lab. Zool. Portici, 8: 318. Genotype: *Asphinctopone silvestrii* Santschi, 1914, loc. cit., fig. 6, worker, monobasic. *Asphinctopone (lucida)* Weber, 1949, Amer. Mus. Novit., 1398: 7, figs. 5-7, worker.

Lepidopone Bernard, 1953 (1952), Mém. Inst. Française Afr. Noire, 19 (1): 207. Genotype: *Lepidopone lamottei* Bernard, 1953, op. cit., p. 208, fig. 4, worker, monobasic. **New synonymy.**

Professor Bernard has raised the genus *Lepidopone* for a species (*lamottei*) having the general characters of *Asphinctopone*, but supposedly differing in details of the coxae of the posterior legs, post-peduncle of the petiole and basiventral process of the gaster. However, it is difficult to understand how these features may be cited as differences marking a separate genus when none of them has as yet been reported upon for either species of *Asphinctopone*. From the descriptions and figures of *A. silvestrii* and *A. lucida*, it seems probable, not that the characters are absent, but rather that they are obscured by glue in the types or that they otherwise escaped observation. Bernard offers no further evidence concerning these structures of either older species, so it is premature to insist that their presence in the new species constitutes a valuable difference. The basiventral

process particularly should not be singled out as a diagnostic feature unless it is found to be developed in some unique direction; actually, this process in some form is found widely throughout the Ponerinae in many genera and species. However, even should the two *Asphinctopone* species prove, in the long run, to lack the unusual development of the characters in question as seen in *lamottei*, it would seem that the strong relationship of all three species named above overrides considerations based on minor characters. It seems preferable by far to avoid setting up what is at best a very weak monotypic genus when the generic unity of the three species is so clear. *Asphinctopone lamottei* (Bernard) becomes the necessary **new combination**.

HYLOMYRMA Forel

Pogonomyrmex (Hylomyrma) Forel, 1912, Mém. Soc. Ent. Belg., **20**: 16.

Genotype: *Pogonomyrmex (Hylomyrma) columbianus* Forel, 1912, loc. cit.,
by original designation.

Lundella Emery, 1915, Bull. Soc. Ent. France, p. 191. Genotype: *Tetramorium reitteri* Mayr, 1887, by original designation. **New synonymy.**

When Forel described *Hylomyrma*, he neglected to mention the spurs of the middle and posterior tibiae. By his association of the new group with *Pogonomyrmex*, the original author at least created the impression that the spurs were present and pectinate as in other members of the tribe Myrmicini. We still do not know whether pectinate spurs are present in Forel's two *Hylomyrma* species, but this question hardly matters now in the face of several exceptions to the same character in members of the Myrmicini. Forel also mentions as a character that "the labrum, with two lateral teeth, surpasses the anterior clypeal border." This is certainly incorrect; what Forel refers to here is the depressed anterior clypeal border which, in an indeterminate *Hylomyrma* specimen from Central America, has a low, blunt clypeal tooth on each side in such a position that a superficial examination might lead to the belief that they were on the labrum. This same indeterminate specimen has the spurs present and very minutely and sparingly barbulate as seen at great magnification. It seems evident from Forel's description of the mandibles and petiolar node, as well as other features, that *Hylomyrma* agrees well with Emery's *Lundella*, even though Emery assigned his genus to tribe Tetramoriini. *Lundella speciosa* Borgmeier, 1937, [described in Arch. Inst. Biol. Veg. 2: 241, figs. 25-29 (worker)] appears to me indis-

tinguishable from *Hylomyrma goeldii* Forel, if the descriptions concerned are accurate. Surely, *L. speciosa* is a typical *Hylomyrma*, and should be compared with authentic specimens of *H. goeldii*. Another specimen from Nova Teutonia, Santa Catharina (F. Plaumann), considered to be a *Lundella* near *reitteri* (Mayr) by Father Borgmeier, is also a *Hylomyrma*, and may be the same as *goeldii*, with the description of which it agrees. The recognition of the generic synonymy thus throws five species together and creates problems of specific synonymy that will only be certainly settled when more is known about the types concerned than is given in their mostly inadequate descriptions.

I believe that *Irogera*, considered by Emery to be a subgenus of *Rogeria*, is either very close to or synonymous with *Hylomyrma*. The two *Irogera* species from the New World, *I. procera* Emery and *I. tonduzi* (Forel), are known to me only from the original characterizations, which are very inadequate, and I therefore suspend judgment until the types can be examined. *Irogera* should, however, be considered as a genus distinct from *Rogeria* for the time being. Further it is clear that the Oriental-Pacific species placed by Mann in *Irogera*, and by Santschi in *Rogeria*, do not belong there, but instead should be shifted to *Lordomyrma* Emery. The further study of species belonging to the genera mentioned in this paragraph requires the review of certain crucial types before a solid rearrangement can be made. It is apparent now, however, that *Rogeria* has never been clearly defined, and that it has served as a dumping ground for ambiguous myrmicine species throughout its existence. While the species concerned are mostly rare and economically unimportant ones, little-known taxonomically or biologically, their systematic placement will affect myrmicine classification most profoundly.

BLEPHARIDATTA Wheeler (tribal transfer)

Blepharidatta Wheeler, 1915, Bull. Mus. Comp. Zool., 59: 484. *Genotype:*
Blepharidatta brasiliensis Wheeler, 1915, monobasic.

Wheeler and other authors have considered *Blepharidatta* to belong to tribe Attini or tribe Dacetini, but a recent study of the types of *B. brasiliensis* convinces me that the genus is really a member of the Ochetomyrmicini. The single species is very closely related to the species of *Wasmannia* Forel, differing chiefly in its more elongate head with produced posterior angles and in having a long, low petiolar node. *Wasmannia* seems scarcely to be separable from its sister-genus

Ochetomyrmex Mayr by means of the presently-employed character based on the form of the clypeus. *Wasmannia williamsoni* Kusnezov is one ambiguous species, and there may be still others in which the clypeal form is intermediate. I have already shown that *Hercynia* J. Enzmann is a junior synonym of *Wasmannia* (Brown, 1948, Ent. News, 59: 102).

TECHNOMYRMEX Mayr

Technomyrmex Mayr, 1872, Ann. Mus. Civ. Stor. Nat. Genova, 2: 147.

Genotype: *Technomyrmex strenuus* Mayr, 1872, by designation of Bingham, 1903.

Aphantolepis Wheeler, 1930, Psyche, 37: 44. Genotype: *Aphantolepis quadricolor* Wheeler, 1930, loc. cit., fig. 2, worker, monobasic. **New synonymy.**

In his figure of *A. quadricolor*, Wheeler shows an ant agreeing in every respect with a *Technomyrmex* of group *sophiae* Forel, but with a small, clearly-drawn poison-ejecting conule at the tip of the gaster. This conule is characteristic of the subfamily Formicinae, and Wheeler assigned his new genus to this subfamily. The type worker of *A. quadricolor* has long since been dislodged from its point and lost, but two whole legs and other fragments remain stuck to the glue on the point. Placed beside the type pin in Wheeler's collection are other specimens, determined as this species by Clark and evidently confirmed by Wheeler, collected by T. Greaves at Cairns, northern Queensland (the type locality is "Cairns dist., rotting leaves; A. M. Lea"). These specimens agree in detail with Wheeler's characterization and figures, and their legs correspond with the parts on the type point, but they do not have an ejaculatory conule. I myself took a specimen of this ant among dead leaves on the rain-forest floor at Kuranda, near Cairns (probably the precise locality of the original type collection), and this agrees perfectly with the other material. It is obvious that the ant in question is a dolichoderine, not a formicine, and that it is most closely related to *Technomyrmex sophiae* Forel of southern Queensland; Wheeler's depiction of the gastric apex is due to an illusion or an artifact that led him to think the conule was present in the type; he was probably further misled by certain large paired setae on the alitruncal dorsum that resemble those of *Paratrechina*, etc. The necessary **new combination** is *Technomyrmex quadricolor* (Wheeler); the ant is distinguished from other *Technomyrmex* species by its rounded propodeum and its rather smooth,

shining integument; it is ferruginous yellow in color, with blackish gaster, whereas *T. sophiae* is black throughout.

EUPRENOLEPIS Emery

Prenolepis (*Euprenolepis*) Emery, 1906, Ann. Soc. Ent. Belg., **50**: 134. *Genotype*: *Prenolepis procera* Emery, 1901, by original designation.

Paratrechina (*Euprenolepis*) Emery, 1925, Gen. Ins., **183**: 223-224; synonymy and characterization.

Chapmanella Wheeler, 1930, Psyche, **37**: 41. *Genotype*: *Chapmanella negrosensis* Wheeler, 1930, *op. cit.*, pp. 42-44, fig. 1; worker (minor), monobasic. **New synonymy.**

Wheeler described his new genus and species from a single badly mauled worker taken from the column of a raiding *Aenictus* army. He differentiated his genus from *Prenolepis* and *Paratrechina* (*sensu* Emery in Gen. Ins.) by means of its small eyes, short palpi, form of petiole and gastric base, very long appendages, and the absence of spurs on the middle and hind tibiae. He was wrong about the last character; the type possesses minute spurs, one to each of the two posterior pairs of tibiae. The "apparently 6-jointed" maxillary palpi, shown with five segments in the original figure, are four-segmented in the type, with the basal and apical segments short and the second and third long. In these and other characters of habitus, eye size, etc., *C. negrosensis* shows itself to be a minor worker of one of the light-colored species of *Euprenolepis*, and it agrees well with a *Euprenolepis* species (undetermined) seen from New Guinea and Cape York, except that it has a somewhat thicker, lower petiolar node. *Euprenolepis negrosensis* (Wheeler) is the **new combination**.

Euprenolepis may as well be considered as an independent genus for the time being, though further investigation may show that it is connected to *Paratrechina* by intergrades. The workers are larger than most *Paratrechina-Nylanderia* species, and are, so far as is known, markedly polymorphic; the appendages are very long and slender, and like the rest of the body are set with numerous long, fine, erect hairs. The species vary in pigmentation, eye size, and shape of the petiole, but are otherwise rather homogeneous. In cabinet specimens, the mandibles are frequently closed so tightly as to cross over one another and lie largely hidden beneath the clypeus; this is seen in certain other formicine and dolichoderine genera on occasion.

The species *geei* Wheeler apparently does not belong to *Eupreno-*

lepis, as Wheeler believed; by its habitus, it is more like *Prenolepis*, and should be shifted to that genus pending revision of the whole complex. I have taken *geei* in moist deciduous forest at 4000 feet in the mountains behind Kuanhsien, Szechuan Province, West China; its type locality is Mokanshan, China.

ANISOPHEIDOLE FROGGATTI (Forel)

Pheidole froggatti Forel, 1902, Rev. Suisse Zool., 10: 414, female, male.

Monomorium lippulum Wheeler, 1927, Boll. Lab. Zool. Portici, 20: 89-90, fig. 3, worker (minor). **New synonymy.**

A. froggatti has a very broad range of polymorphic workers, although the largest soldier forms have so far only been reported in flourishing nests from extreme southwestern Australia. The distribution of this species is broader than commonly believed, and it occurs widely in central Australia and as far to the southeast as the Victorian Mallee. Cotypes of *M. lippulum* from the MacDonnell Ranges in central Australia (J. W. Finlayson) agree perfectly with an *A. froggatti* ergatotype and other specimens, all minor workers, from South and Western Australia. Localities for collections in the Museum of Comparative Zoology are as follows: Western Australia: Lion Mill ergatotype *minim* (Hamburg Expedition). Manjimup; Augusta (W. S. Brooks). Beverly (F. H. du Boulay). Woorooloo, on Darling R.; Latham (L. Glauert). Rottnest I. (P. J. Darlington). Ludlow (J. Clark). Kukerin (A. Douglas). Margaret River (W. M. Wheeler). South Australia: Mt. Remarkable, Southern Flinders Ranges, ca. 1300 feet, under rock in dry open eucalypt woodland (W. L. Brown). Cape Borda Lighthouse, Kangaroo Island, under stone in low headlands sand heath (Brown). Victoria: Sea Lake, mallee district (J. C. Goudie). Northern Territory, in addition to *M. lippulum* type collection: 3-5 miles west and southwest of Alice Springs, depauperate colonies under stones in dry gullies, mulga (*Acacia aneura*) dominating vegetation (Brown). Other *M. lippulum* ectypes, in the South Australian Museum, are from Port Lincoln, South Australia, collected by A. M. Lea.

Anisopheidole Forel forms with its curious monotypic sister genera *Adlerzia* Forel and *Machomyrma* Forel a closely interrelated group showing certain features in common with *Pheidole* and *Stenamma*. The ranges of the single species of each of the three genera are largely separate so far as known; *Adlerzia froggatti* occupies southeastern

Australia, while *Machomyrma dispar* occurs in tropical and subtropical Queensland. When the sexual forms of these three species have been thoroughly compared, it may prove advisable to combine them into one genus in spite of notable differences in the form of the clypeus and petiole now serving to separate them generically.

The elimination of *lippulum* and *Adlerzia froggatti* from *Monomorium* helps considerably to relieve the heterogeneity of this large and taxonomically confused genus. Kusnezov has eliminated the South American group *Martia* Forel from consideration under *Monomorium* in a recent paper. It is by such small but necessary revisionary steps as these that confusion in the Myrmicinae will finally be eliminated.